Jay A. Aldous, DDS, MS
Richard C. Engar, DDS, FAGD

Do dentists prescribe narcotics excessively?

Abstract
Dealing with pain is an inevitable sequela to dental treatment. Although several drug regimens primarily involving narcotics have been used in the past, availability of nonsteroidal anti-inflammatory drugs (NSAIDs) has increased recently. A study was conducted to analyze dental prescribing patterns for analgesics. Data analysis of a survey of 130 dentists revealed that respondents still rely on narcotic analgesics for pain relief and generally exceed needed potency and quantities in their prescribing habits. Dentists are treating rather than preventing pain, and NSAIDs are underused.

Providing good dental care entails preventing and alleviating disease and pain. When some dental services are rendered, immediate or posttreatment discomfort is inevitable. To allay pain, anesthetics are used during treatment, and anesthetics and analgesics are used after treatment. Many pharmacological choices are available for mitigating pain. In 1987, acetaminophen (Tylenol) with codeine was the sixth most frequently prescribed new and refilled prescription medication.[1] By 1993, because of increased popularity of other analgesics, Tylenol with codeine had fallen to 32nd place.[2] During this time, nonsteroidal anti-inflammatory drugs (NSAIDs) increased in popularity. Thoughtful decisions concerning pain management are in the best interest of patients and practitioners and can be made without compromising patients' comfort.

Excessive use of narcotic analgesics is a problem. Abuse of heroin (introduced in the United States as a nonaddictive analgesic in 1898) was partly responsible for the first Food and Drug Act of 1906. Legislative attempts at drug control have been numerous, including: The Harrison Narcotic Act of 1916; Food, Drug, and Cosmetics Act of 1938; Durham-Humphrey Law of 1952; Kefauver-Harris Bill of 1962; and Drug Control Amendments of 1965. The Controlled Substance Act of 1970 provided statutory control of narcotics and other addictive agents. Under this law, only practitioners who are registered with the Drug Enforcement Agency may order controlled substances. Yet, up to 15 percent of the medications from controlled substance prescriptions are sold on the street; one third of all drugs sold illegally are prescription drugs.[3] The reason for the great demand for prescription drugs is product quality. Because prescription drugs are concentrated and pure, they are preferred to illegally manufactured or processed drugs. For example, a tablet of hydromorphone (Dilaudid), which costs about $1 in a pharmacy, may be sold for more than $75 on the street.[4]

The availability of prescription medications on the street is attributed partly to prescribing practices of some dentists. The question "Am I contributing to the local drug market?" must be considered whenever a controlled-substance prescription is written. Prescription-drug traffickers can be deceptive, manipulative, or abusive, and use a number of ruses.[3,5]

Pain management is a topic of perennial interest to dentists. They prescribe analgesics most frequently among medications.[6-9] Pain was relieved 100 years ago with various forms of ethanol and opium. Around 1900, the first nonnarcotic analgesics (notably acetylsalicylic acid [aspirin]) became available. Since then, other compounds with great range in analgesic potency have been developed. The advent of NSAIDs opened another area of pain control. The era when dentists routinely prescribed a dozen Empirin No. 3, Tylenol No. 3, or Percocet tablets is concluding. The scope of traditional analgesic therapy during that era was treating symptoms. Now, when properly administered before and after treatment, NSAIDs can provide complete relief by interrupting pain generation. Dionne described an approach to analgesic therapy in-

volving the advantages of NSAIDs and narcotics.[10] In other reports, the efficacy of NSAIDs or their superiority over narcotics in alleviating pain is substantiated.[11-14]

Some patients are prepared psychologically to accept only narcotic analgesics. Dentists are responsible for informing them about the advantages of alternative therapies—which do not produce the pharmacologic side effects of narcotic analgesics (use of which can cause respiratory depression, sedation, nausea, psychological changes, and dependence). Operating motor vehicles and machinery should be avoided when narcotic analgesics are used, but not when NSAIDs are used. Few reports have been published about the prescribing habits of dentists. Such information should be obtainable by survey or personal communication, and the authors were interested in determining whether traditional narcotic analgesics are preferred over NSAIDs as a means of controlling posttreatment pain.

Methods

At a state dental convention, a survey was conducted to analyze dental prescribing patterns for analgesics. Questions were based on routine dental procedures performed by general dentists. Dentists were asked to read each question and respond appropriately by writing prescriptions that they would write most commonly in three situations—involving severe, moderate, and mild pain. By analysis, analgesics were grouped into NSAIDs (including aspirin), acetaminophen, and narcotics (including combinations with aspirin, acetaminophen, or other drugs such as sedatives).

Results

Survey results are presented in the Figure.

I. Write a prescription for an analgesic following extraction of a full bony impacted tooth No. 32 in a healthy 18-year-old woman.

N = 130
85% wrote prescriptions 15% did not perform this procedure

% of prescriptions	
15	NSAID
85	Narcotic

The average narcotic prescription was for 14 doses
The highest number of doses was 24, and the lowest was 6

II. Write a prescription for an analgesic following a simple extraction of tooth No. 20 in a healthy 30-year-old man.

N = 130
95% wrote prescriptions 5% did not perform this procedure

% of prescriptions	
36	NSAID
54	Narcotic
8	Acetaminophen
4	Nothing

The average narcotic prescription was for 13 doses
The highest number of doses was 24, and the lowest was 6

III. Write an analgesic prescription for a patient receiving root canal therapy who has pain and swelling in tooth No. 5 but no contributing medical history. Would you also prescribe an antibiotic?

N = 130
95% wrote prescriptions 5% did not perform this procedure

% of prescriptions	
29	NSAID
5	Nothing
65	Narcotic

The average narcotic prescription was for 13 doses
The highest number of doses was 24, and the lowest was 8
Antibiotics were prescribed in 83% of cases

Fig. Results of a survey to analyze the dental prescribing patterns for analgesics.

Discussion

Respondents rely most on narcotic analgesics for pain relief. The most commonly prescribed narcotic was a brand of hydrocodone and acetaminophen, perhaps due to hydrocodone's potency (Schedule III, telephone-order prescribing) and good marketing. Hydrocodone's black-market popularity and value should make dentists more cautious in prescribing this product. To prevent complaints from patients, respondents wrote prescriptions that exceeded the needed potency and quantities, e.g., 24 oxycodone-acetaminophen doses after a simple tooth extraction. Classifying pain and prescribing for need rather

than convenience may curb substance abuse. In a random examination of prescriptions written by dentists for Medicaid patients, a Drug Utilization Review Board (DUR) found that 53 percent of prescriptions written by dentists were for narcotics, and that narcotic prescriptions are repeated for the same clients several times.[15] In the DUR study, prescriptions exceeded the potency needed for most dental procedures.

Prescribing patterns for narcotic use and quantities differ for the three theoretical cases. In the majority of cases, pain medications need not be prescribed for more than 48 hours.[16] Some practitioners use strong analgesics rather than customize the dosage (i.e., prepare patients prophylactically). Even with dentists' highest interest in providing adequate pain control, reports about pain control and information from pharmaceutical manufacturers indicate that dentists are not improving nor updating pain-control techniques.

The origin and perception of pain involve a complex mechanism that is complicated further by psychological components. Most dental pain is mild to moderate and is controlled adequately by NSAIDs, which are believed to act peripherally. Thus, NSAID therapy is an alternative to narcotics. Dentists with improved technical approaches and skill can reduce trauma. They can prevent pain by administering NSAIDs, which are highly effective when used to their best advantage.[10-14] A therapeutic NSAID plasma level before onset of pain greatly increases effectiveness. Maintaining this level, rather than administering analgesic when pain recurs, offers the most effective pain control. The action of the NSAID prevents formation of prostaglandins involved in pain generation and transmission. Long-acting local anesthetics that supplement initial local anesthesia may eliminate or diminish the need for analgesics following treatment. Most students in a remedial pharmacology course for dentists who have abused their narcotic prescribing privilege, and lost their state controlled-substance license, kept patients pain-free with NSAIDs during the period in which narcotics could not be prescribed. The number of NSAIDs from several chemical classes offer choices in potency, time of onset, duration of action, and cost. Prescribed intelligently, NSAIDs keep patients pain-free with minimal side effects, and without sedation, respiratory depression, or dependency.

Conclusions

Narcotic analgesics are the most common pain medications prescribed. Some respondents prescribed up to 24 doses of strong narcotics following simple tooth extraction, which could be excessive. Dentists are treating rather than preventing pain. NSAIDs are underused in prevention and treatment of pain to eliminate the objectional side effects of narcotics. We do not suggest that narcotic analgesics never be used, but point out that adequate analgesia for mild to moderate pain can be achieved with nonnarcotic agents. Careful prescribing prevents excessive use, abuse, and illegal diversion of narcotics.

Dr. Aldous is an associate professor, Department of Surgery, University of Utah School of Medicine, Salt Lake City, and director, General Practice Residency and Advanced Education in General Dentistry, University of Utah. Dr. Engar is Attorney-in-Fact (Chief Executive Officer), Professional Insurance Exchange, Salt Lake City, and a clinical instructor, Department of Pathology, University of Utah School of Medicine, in conjunction with the university's General Practice Residency and Advanced Education in General Dentistry programs.

Address correspondence to: Dr. Richard C. Engar, 445 East 4500 South, No. 130, Salt Lake City, UT 84107-3101.

References

1. Hartzema AG. Pharmaceutical services chartbook. Chelsea, Michigan: Lewis Publishers, Inc.;1990:31.

2. Top 200 medications. Am Druggist 1994;209:28-29.

3. Goldman B. How to thwart a drug seeker. Emerg Med 1991;23:48-61.

4. Vice Squad, Personal communication, Salt Lake City Police Department, July 1994.

5. Shiloah J, Lee WB, Binkley LH. Self-inflicted oral injury to secure narcotic drugs. JADA 1984;108:977-978.

6. Cottone JA, Karfrawy AH. Medication and health histories: a survey of 4,365 dental patients. JADA 1979;98: 713-718.

7. Miller CS, Kaplan AL, Cottone JA. Documenting medication use in adult dental patients: 1987-1991. JADA 1992;123:41-48.

8. Niessen L. Oral pharmaceuticals and adult dental patients. JADA 1994; 125:54S-67S.

9. Ruthkauskas JS. Drug prescription practices of hospital dentists. Spec Care Dentist 1993;13:205-208.

10. Dionne RA. New approaches to preventing and treating postoperative pain. JADA 1992;123:27-34.

11. Cooper SA. Five studies on ibuprofen for postsurgical dental pain. Am J Med 1984;77:70-77.

12. Sunshine A, Marrero I, Olson N, McCormick N, Laska EM. Comparative study of flurbiprofen, zomepirac sodium, acetaminophen plus codeine, and acetaminophen for the relief of postsurgical dental pain. Am J Med 1986; 80(3A):50-52.

13. Cooper SA, Mardirossian G. Comparison of flurbiprofen and aspirin in the relief of postsurgical pain using the dental pain model. Am J Med 1986:80(3A):36-40.

14. Dionne RA. Suppression of dental pain by the preoperative administration of flurbiprofen. Am J Med 1986; 80:(1A)41-49.

15. Drug Utilization Review Board of the Division of Health, State of Utah, Personal communication, Salt Lake City, December 10, 1992.

16. Bradley B. Pain control for dental procedures in patients with hemophilia. Presented at the Conference for Dental Care of the Hemophilia Patient; November 6-7, 1986; Ann Arbor, Michigan.